intervention (PCI), especially for patients with chronic kidney disease (CKD) and congestive heart failure (CHF). The objective of this study was to investigate the impact of CM with different osmolality on cardiac preload in patients with CKD and CHF.

METHODS 90 non-ST elevation acute coronary syndromes (NSTE-ACS) patients with renal insufficiency (estimated glomerular filtration rate≤60 ml/min) and CHF were equally randomized to receive either iodixanol 320 (Visipaque) or iopromide 370 (Ultravist) in PCI processes. We applied pulse indicator continuous cardiac output (PICCO) technology to observe the change of hemodynamic indexes in the perioperative period. Contrast induced nephropathy (CIN) was defined as increase in serum creatinine ≥0.5 mg/dl or >25% from baseline.

RESULTS Baseline characteristics were well-matched between the 2 groups. CIN developed in 21 patients (23.3%), and there was no significant difference between the iodixanol and iopromide groups (17.8% *vs.* 28.9%, P=0.213). Extravascular lung water index (EVLWI), global end-diastolic index (GEDI) and central venous pressure (CVP) were all significantly increased after application of CM in the iopromide group (13.1±3.8 ml/kg *vs.* 8.4±3.2 ml/kg in EVLWI; 1381±472 ml/m^2 *vs.* 962±362 ml/m^2 in GEDI; 14±5 mmHg *vs.* 11±5 mmHg in CVP; all P<0.001), and the changes of these preload indexes in the iopromide group were all significantly greater than in the iodixanol group (all P<0.05). The incidence of adverse events in terms of death, myocardial infarction, repeat revascularization did not differ between the two groups, but the incidence of acute heart failure in the iopromide group was significantly higher than the iodixanol group (P=0.048).

CONCLUSIONS Iopromide could significantly increase cardiac preload in patients with CKD and CHF as compared to iso-osmolar CM iodixanol, and this is associated with a higher occurrence of acute heart failure event during the perioperative stage.

GW26-e0392

Central Venous Pressure Guided Hydration Reduces Contrast Induced Nephropathy in Patients Undergoing Coronary Procedures with Chronic Kidney Disease and Congestive Heart Failure

Geng Qian, Feng Cao, Yundai Chen
Department of Cardiology, Chinese People's Liberation Army General Hospital

OBJECTIVES Patients at moderate or high risk for contrast induced nephropathy (CIN) should receive sufficient hydration before contrast application to prevent CIN. The guidelines recommend controlling rate of fluid administration in patients with heart failure, but inadequate hydration markedly increases the incidence of CIN. We expect to explore an individual hydration method for patients with congestive heart failure (CHF) and chronic kidney disease (CKD) to reduce the incidence of CIN and at the same time to avoid the acute heart failure for these patients.

METHODS This prospective, randomized, double-blind, comparative clinical trial enrolled 264 consecutive patients with CHF and CKD undergoing coronary procedures. These patients randomly received either central venous pressure (CVP) guided hydration (n=132) or standard intravenous isotonic saline hydration (control group; n=132). In the CVP guided group, hydration infusion rate was automatically adjusted according to CVP level every hour, and both study groups received intravenous fluids for the same duration but at different rates. CIN was defined as an absolute increase in serum creatinine (SCr) > 0.5 mg/dL (44.2 μmol/L) or a relative increase >25% compared to baseline SCr. Adverse events were assessed by 3 months follow-up and all such events were classified by staff who were masked to treatment assignment. This trial is registered with ClinicalTrials.gov, number NCT02405377.

RESULTS Baseline characteristics were well-matched between the two groups. Mean baseline SCr and the predictive CIN risk score were comparable in the two groups. The total mean volume of isotonic saline administered in the CVP guided hydration group is significantly higher than the control group (1827±497 *vs.* 1202±247; p<0.001). CIN occurred less frequently in CVP guided hydration group than in the control group (15.9% *vs.* 29.5%; p=0.006). The incidences of acute heart failure (acute pulmonary edema) during the perioperative period did not differ between the two groups (6.8% *vs.* 7.6%; p=0.500). A lower incidence of cumulative 90-day adverse events (renal replacement therapy, acute myocardial infarction, acute heart failure and death) was also observed in CVP guided hydration patients than in controls (8.3% *vs.* 20.5%; p=0.004).

CONCLUSIONS CVP guided fluid administration can safely and effectively reduce the risk of CIN for patients with CKD and CHF.

GW26-e0451

Circulating Long Non-coding RNA, NONHSAT112178, with function, a Novel Biomarker for Diagnosis of Coronary Artery Disease

Yujia Yang,[1,2] Yue Cai,[1,2] Chunyu Zeng[1,2]
[1]Department of Cardiology, Daping Hospital, The Third Military Medical University, Chongqing, P.R. China; [2]Chongqing Institute of Cardiology, Chongqing, P.R. China

OBJECTIVES To investigate the long noncoding RNA (lncRNA) NONHSAT112178 as a biomarker for coronary artery disease (CAD) in peripheral blood monocyte cells (PBMC).

METHODS RT-qPCR was performed to validate the microarray results, ROC curve was applied to study the potential of NONHSAT112178 as a biomarker. Diagnostic models from NONHSAT112178 alone or combination of risk factors were constructed by Fisher criteria. The function of NONHSAT112178 was confirmed in THP-1 cell line by siRNA.

RESULTS The result indicated the expression of NONHSAT112178 in PBMCs from CAD patients increased more than twice times by microarray analysis and RT-qPCR compared with the control group, P<0.05. Further validated independently in a population (20×20), NONHSAT112178 expression (about 2.2-fold in CAD patients), was consistent with the result from lncRNA microarray. The predictive value of NONHSAT112178 was assessed in a larger population of 211 CAD patients and 171 controls. Using a diagnostic model by Fisher criteria, considered the risk factors, the corresponding optimal sensitivity was increased from 70.00% to 82.00%, the specificity was slightly decreased from 94.00% to 78.00%, respectively. AUC was increased from 0.727 to 0.785 (P=0.001), from 0.712 to 0.768 (P=0.010), and from 0.769 to 0.835 (P=0.069), in original, training and test set, respectively. Moreover, in a prospective study, we found the sensitivity of NONHSAT112178 was increased from 68.00% to 76.00% and specificity was decreased from 90.00% to 82.50%, respectively. NONHSAT112178 was also found to be specific in CAD compared with other cardiovascular diseases. Finally, we found neighboring protein-coding gene peroxisome proliferator-activated receptor delta (PPARD), and its target genes adipose differentiation-related protein (ADRP) and angiopoietin-like 4 (ANGPTL4) are all transrepressed by NONHSAT112178.

CONCLUSIONS Our present study indicated that NONHSAT112178 with function, neighboring protein-coding gene PPARD, combination of risk factors can be used as a biomarker for CAD.

GW26-e1018

Left Ventricular End-Diastolic Pressure and Brain Natriuretic Peptide Guided Low-Dose Furosemide for Preventing Contrast-induced Nephropathy in the Percutaneous Coronary Intervention

Guoqiang Gu, Wei Cui
Department of Cardiology, the Second Hospital of Hebei Medical University, No 215, Hepingxi Road, Shijiazhuang City, Hebei Province, China, 050000

OBJECTIVES This study was to evaluate on the prophylactic effect of low-dose furosemide guided by left ventricular end-diastolic pressure and brain natriuretic peptide on contrast-induced nephropathy of patients with percutaneous coronary intervention on basis of adequate hydration.

METHODS The patients of PCI(Percutaneous Coronary Intervention) were recruited. The inclusion criteria: 1.male or female, 18-75 years old; 2.sign the informed consent. Exclusion criteria: 1.inability to obtain consent from participants; 2.primary percutaneous coronary intervention for ST-segment elevation myocardial infarction; 3.renal replacement therapy; 4.exposure to radiographic contrast media within the previous 2 days; 5.allergy to radiographic contrast media; 6.acute decompensated heart failure; 7.severe valvular heart disease; 8.mechanical aortic prosthesis; 9.left ventricular thrombus; 10.history of kidney or heart transplantation. The patients were divided into two groups: the control group and experimental group, the basic characteristics and routine examinations were recorded. All patients were given standard hydration process according to the guideline, the control group was administered 20 mg furosemide right after the procedure, but the experimental group was treated individually, according to the result of BNP(Brain Natriuretic Peptide) and LVEDP (Left Ventricular End-Diastolic Pressure). Only the patients of LVEDP≥15mmHg or BNP≥100pg/ml or BNP more than 50% of preoperative values were given 20 mg furosemide and the rest had no special treatment. The creatinine was obtained before and 48h after the PCI procedures, so the creatinine clearance rate and glomerular filtration rate could be calculated, also the all-cause mortality,